ORDERS OF GOVERNMENT.

No. $\frac{2091}{I-434}$ of 1897.

From

THE CHIEF SECRETARY TO GOVERNMENT,
N.-W. PROVINCES AND OUDH,

To

THE DIRECTOR OF LAND RECORDS AND AGRICULTURE,
N.-W. PROVINCES AND OUDH.

DATED NAINI TAL, THE 4TH AUGUST 1897.

SIR,

REVENUE DEPT. I AM directed to acknowledge the receipt of your letter No. $\frac{1521}{V-301}$, dated the 7th June 1897, with which was submitted the annual report on the Lucknow Horticultural Gardens for the year ending 31st March 1897.

2. The report is satisfactory, and the good management of the garden reflects credit on Mr. Ridley.

3. The suggestion contained in paragraph 7 of your review, to advertise that seeds and plants are available on payment for supply to the public, is approved.

4. I am to acknowledge the kindness of the gentlemen mentioned in paragraph 88 of Mr. Ridley's report who have contributed seeds and plants to the Garden during the year.

I have the honor to be,
SIR,
Your most obedient servant,

H. F. EVANS,

Chief Secy. to Govt., N.-W. P. and Oudh.

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Hemendra Kothari

on 24 February, 2020

REPORT

ON THE

Horticultural Gardens, Lucknow,

FOR THE YEAR ENDING 31ST MARCH 1897.

Price, 8 annas.

P. No. 1002.—8-7-97. 445.

No. $\frac{1521}{V-301}$ of 1897.

DEPARTMENT OF LAND RECORDS AND AGRICULTURE, NORTH-WESTERN PROVINCES AND OUDH.

From

J. S. MESTON, Esq., C.S.,
Director of Land Records & Agriculture,
N.-W. Provinces and Oudh,

To

The CHIEF SECRETARY to GOVERNMENT,
N.-W. Provinces and Oudh,

Dated Lucknow, the 7th June 1897.

Sir,

I have the honor to submit Mr. M. Ridley's report on the working of the Government Horticultural Garden at Lucknow for the year ending 31st March 1897. Mr. Ridley was in charge throughout the year except for three months (20th August 1896 to 24th November 1896), when he was absent on privilege leave, and the garden was supervised by Mr. Phillips from Allahabad.

2. The pervading note of the report is the severity of the seasons. The Lucknow Garden is not, like its sister institution at Saháranpur, protected by canal irrigation; and it has now had to face two successive years of exceptional drought, following on heavy and destructive floods in the autumn of 1894. That, despite all this, it has retained its highly ornamental appearance, and at the same time returned a satisfactory statement of accounts, speaks highly for the care Mr. Ridley has for years bestowed on it. Though development has been arrested by the excessive dryness of the air and soil, no serious loss of stock is reported during the year now closed.

3. The balance-sheet printed as Appendix I shows an expenditure of Rs. 16,697-13-1, against a credit account of Rs. 13,734-15-8, including the value of plants issued free of charge. The deficit of Rs. 2,962-13-5 is somewhat above the average, but the result is much more favourable than might have been expected from the untoward character of the seasons, and every reasonable economy has been exercised. The garden could no doubt be made self-supporting if necessary, but any sacrifice of its position as one of the chief decorative features of Lucknow would be unwarrantable.

4. The Garden orchards suffered greatly from drought, and all the staple trees yielded light crops. Mr. Ridley considers the *alu bokhara* his best paying fruit, and continues to extend the area devoted to it. The distribution of fruit trees expands yearly; oranges, pine-apples, limes and lemons having been in greatest request. The excellent quality of the young stock sent out by Mr. Ridley is well known throughout the Provinces, and I can add my personal testimony to that of many other customers of the garden.

5. The outturn of vegetables and farm produce was as good as could be hoped for: as in Saháranpur, tomatoes were a failure and peas were weak. The gram and *lobia* experiments were defeated by the weather, and the cultivation of the rum plant or wild indigo of Assam was proved to be unsuitable to this part of India. The issues of acclimatised vegetable seed continued to extend, popular opinion coming steadily round to its superiority over directly imported seed. Mr. Ridley is justly proud of his work since 1888 in connection with hill potatoes. Despite their greater cost in seed, they are pushing their way in the local market, and are an immeasurable advance on the dwarfed

and tasteless tubers of Farukhabad. It would, however, be interesting to have information as to how long they can maintain their excellence by reproduction in the plains, and at what intervals deterioration has to be stopped by importing fresh seed from the hills.

6. Like every thing else, flowers have felt the want of rain, and in consequence the demand for seeds has been partly checked. But the supply of pot flowers has been well maintained, and the beautiful plant houses continue fully stocked. The exotic plantation, too, has made little progress, all except the *eucalyptus* trees, which have again shown good results under trying climatic conditions.

7. It is doubtful if Mr. Ridley's readiness to provide guaranteed fresh flower and vegetable seeds is sufficiently widely known to the general public, and I would recommend suitable advertisement in the leading newspapers of the resources available at Lucknow. The owners of private gardens, in ignorance of what can be got from Mr. Ridley, are often driven to buy from small private firms where they may or may not get good value: not unfrequently the seed packets thus obtained, though bearing the names of well known dealers, are several seasons old and the chances of germination are poor. This risk is not incurred with Mr. Ridley's issues, and I think the fact should be better known.

8. Among the most interesting paragraphs in the report are those dealing with the Arabian date palm (9-11), Egyptian Cotton (24), and the *Ingadulcis* tree (53-56). Mr. Ridley's experience with the Arabian date palm at Lucknow, read with Mr. Gollan's dubious comments on it at Saháranpur, go to show that the expectations formed of the tree as a valuable source of food in dry seasons may be given up. To be a success, the tree would apparently require complete drought between the middle of August and the end of September, and during that period only. Even in years of greatest scarcity, if a few showers fell in September or the end of August, the dates would be a failure. The Egyptian cotton seeds received from Madras have done well, and their further results will be awaited with interest. Mr. Ridley's views on the *Ingadulcis* (*wilayati babul*, as the people vaguely term it) deserve wide publication. The value of the tree as a quick-growing and shady hedge is proved by the fine avenue of it at the Cawnpore Experimental Farm. In the Lucknow Garden it has shown its other and higher quality as contributing to the auxiliary food-supplies in time of scarcity. A copy of Mr. Ridley's paragraphs 53 to 55 has been circulated to all Chairmen of District Boards with the request that, if they think proper, a small supply of *ingadulcis* seed may be purchased from their arboricultural funds and planted as an experiment in their headquarters nurseries.

9. The treatment of apprentice gardeners was referred to in the Government review on last year's report; and in accordance with the wishes of Government, their period of training has now been fixed at five years. After their training is over, apprentices have ordinarily to leave the garden: but, if they have taken to the work, there is no danger of their lacking employment, as the applications for gardeners, both at Lucknow and at Saháranpur, continue to be much more numerous than the Superintendents can comply with.

10. The gentlemen mentioned in Mr. Ridley's paragraph 88 as having sent seeds and plants to the garden during the year are entitled to our best thanks for their contributions.

11. Mr. Ridley's own work is too well known to Government to require any commendations from me. His services, not only in the Horticultural gardens, but in many other pieces of beautiful landscape gardening, have laid Lucknow under lasting obligations.

I have the honour to be,

SIR,

Your most obedient servant,

J. S. MESTON,

Director.

REPORT on the Government Horticultural Gardens, Lucknow, for the year ending 31st March 1897.

I.—Fruit Culture.

1. All fruit crops suffered extensively from the extreme dryness which so strongly characterized the cold and hot weather periods of the year under report.

2. The mango and pine-apple crops were extremely poor. Peach, alubukhara and jackfruits, and leechees moderate only. A considerable portion of the peach crop failed to mature, and the whole of the fruit was smaller in size, and greatly below par in quality, as compared with the produce of normal years.

3. The orange crop, too, was a very light one. Loquats did best, but the fruit was smaller in size than usual. Altogether it was a very bad year for fruit of all kinds.

4. The area covered with the garden variety of alubukhara *(Prunus bukariensis)* has been further extended. From a revenue yielding point of view, it is, I consider, the most satisfactory fruit crop to grow in our soil.

5. A renovated plot, formerly occupied with Sylhet orange trees, was planted up with young plants of the best variety of Malta orange in the garden, and also with a few plants each of plants propagated from the two seedlings of the same type which have been raised in the garden. The fruit yielded by these two seedlings was very fine in all respects, and it will be interesting to observe the result of budding and growing them on the sour lime stock.

B.—Introduction of new kinds.

6. In 1894, two plants each of pears "La Conti" and "Keiffer" were received from Saháranpur and planted out: they have always been healthy and have yearly made very fair growth; but so far have not blossomed.

Pears *(Pyrus communis var).*

7. Compared with the same kinds at Saháranpur they are nothing like so vigorous and robust as the trees in that garden are; still there is good ground for hoping that they may succeed here. Another six plants of each were received from Saháranpur this year, and planted out near those previously planted. A number of grafts have also been successfully made from scions from the older trees in the garden, and worked upon the common naspati for a stock. Thus, though not successful so far, these two pears are receiving due attention and promise very well.

8. Six plants of the Japan orange, known by the name "Satsuma," were procured from Saháranpur and planted out for observation and trial.

Japan orange "Satsuma" (Citrus aurantiaca var).

9. One reason for promoting the planting of the date palm in this part of India was, that it would certainly prove a success in a dry or famine year: the year under report was most unfortunately a famine year, with very light rainfall, and yet the results were much the same in respect to securing ripe dates from the trees in the garden. It so happened that there was some rain in August, when the fruit was nearing maturity, and the moisture which then existed caused the immature fruit to fall.

Arabian dates *(Phœnix dactyifera).*

10. The date appears to require a period of dryness when the fruit approaches and is ripening, some four to six weeks—a state of weather very improbable in this part of India—from say the middle of August to the end of September which is about the usual time dates ripen here.

11. Placing this year's results with those of many preceding ones, makes the hope for successful date growing very slender indeed so far as this part of India is concerned.

C.—Distribution.

12. The details of the year's distribution of fruit trees are as follows :—

Name.	Sold.	Distributed gratis.	Total.
Oranges	800	...	800
Mangoes	367	39	406
Lemons, limes and citrons	904	...	904
Loquats	157	...	157
Vines	13	...	13
Leechees	63	...	63
Peaches	89	...	89
Pine apples	268	...	268
Plantains	28	...	28
Pummelows	58	...	58
Plums and aluchas	37	4	41
Jack-fruit	18	...	18
Papitas	28	...	28
Rose apples	4	...	4
Wampee	34	...	34
Guavas	160	102	262
Custard apples	49	...	49
Kamrakhs	4	...	4
Figs	59	...	59
Pears and apples	90	...	90
Pomegranates	22	...	22
Khirni	6	...	6
Patiyala	2	...	2
Brazil cherry	6	...	6
Dewberry	2	...	2
Momseri	2	...	2
Karondas	2	...	2
Total ...	3,272	145	3,417

13. The total figures show an increase as compared with last year of 1,085. The principal increase is in a larger number of orange trees having been sent out. There is, however, a considerable decrease in the number of mango trees issued, due in part to want of stock and partly to less demand.

14. In connection with distribution, it must be borne in mind that the year was a most unfavourable one for planting of any kind. In the case of oranges a good number of kinds remain on hand in the nursery undisposed of, and of most other kinds stocks admitted of greater demand than took place.

15. The total receipts from sale of fruit trees during the year come to Rs. 873-6, or Rs. 102-12 less than last year. Out of the above Rs. 873-6, Rs. 803-6 received in cash and Rs. 70 adjusted by book transfer.

16. The value of the fruit trees supplied gratis is Rs. 33-4, which, added to the above, makes the total value of the year's distribution for fruit trees Rs. 906-10.

II.—Vegetable and farm culture.

Imported vegetables.

17. For instructional purposes chiefly, the usual vegetable garden was maintained during the cold season, and small quantities of all the culinary vegetables grown.

Seed-yielding vegetables.

18. A considerable number of kinds were also grown for the purpose of yielding seed for distribution: tomatoes for one, and this crop, I am sorry to say, has been almost a complete failure. Peas, too, were poor; the dry season told greatly against both these crops.

Country vegetables.

19. For yielding seed the principal country vegetables were grown in the hot weather and rains; the former were not so good as usual, but the latter gave fairly good results.

20. A few years ago seed of a large variety of Taroi *(Luffa Ægyptical)* was procured from Nowgong: this is now quite established in the garden. Seed of another reputed large variety has this year been obtained from Pachmarhi, but it possibly may prove to be identical with the Nowgong kind.

21. Tinda, "*Citrulus vulgaris, var, fistulosus,*" though grown locally, has been kept in the hands of one or two growers, who refused to dispose of seed. A supply of this has been received from Agra through the kind help of Munshi Sheo Narain, Rai Bahadur, and I hope to establish and maintain a supply of its seed for distribution.

Chocho or vegetabl Pear *(Sechium edule)*.

22. The garden is indebted to the Superintendent of the Botanical Garden, Bangalore, for the two fruits of "chocho," or vegetable pear.

Both are growing, and promise to be a success. This, like the foregoing, is a member of the cucumber family *(cucurbitaceæ)* and produces a pear-shaped fruit, from which, no doubt, its common name has been given. It is said to be a very wholesome vegetable, and to be largely grown and used as such in the Central Jail at Bangalore.

Baingan or Brinjal *(Solanum melongeena)*

23. A collection of Baingan seeds representing 24 varieties was received from the Director of Land Records and Agriculture, N.-W P. and Oudh, for experimental cultivation. All were duly sown, and a plot of equal area has been planted of each kind. The results cannot, however, be given in this report as the fruits are not ripe yet.

Egyptian Cotton *(Gossypium sp)*.

24. Seeds of the best kind of Egyptian cotton were received from the Agricultural Horticultural Society of Madras. The seed was sown in July, but the plants did not grow well, owing probably to the small and irregular rainfall: a few rather small pods is the result of last year's growth.

Since the weather got warm the plants have revived, and are now profusely covered with blossom, giving promise of a very good yield of cotton. The results will be duly noted and reported.

Canaigre *(Rumex hymenocepalus)*.

25. In compliance with a request made by the Superintendent of the Government Harness Factory, Cawnpore, to be supplied with 5 cwts. of canaigre roots for experimental purposes, a plot of this plant has been grown of sufficient dimension to yield the above required.

26. The crop has just been dug up and has yielded 17 maunds of roots, the whole of which have been forwarded to the abovenamed official.

A report will no doubt be duly furnished of the experiment to be made.

A packet of seed was supplied on indent to Messrs Cooper Allen and Co Cawnpore.

Hill potatoes.

27. To this garden belongs the credit of having initiated the use of Hill potatoes for seed, and proving by experiment what a very superior article could be produced on the plains by using for seed tubers grown in the Hills.

28. The first plots were grown in 1883, and in that year 100 maunds of Hill potatoes were distributed among local growers for experiment. The quality of the produce raised from this Hill seed was admitted to be very superior to any previously raised, but the price of Hill seed acted as a check upon a continuation of its use for some time; this appears to have been overcome, as the large quantities of potatoes, the produce of Hill seed now in the market, amply proves. Thus, a great improvement in an important article of food has been set on foot, and the public can now procure a supply of wholesome and palatable potatoe in quantity and at rates not previously existant. The two kinds to which culture was formerly confined on the plains (locally at least) were known as Madrasi and Furrukhabadi, one a round white and the other a pink oblong irregular tuber; both very like a piece of yellow barsoap when cooked.

Cow peas or Lobia *(Vigna catiang var)*.

29 From the Botanical Garden, Saháranpur, seeds of six varieties of Cow pea were received; the trial made was on a small scale, and proved satisfactory, although the season was unfavourable.

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Hemendra Kothari

on 24 February, 2020

Italian gram (*Cicer arietinum vars*).

30. The season was a most unfavourable one for gram, and owing to this the experiment made with the Italian varieties has been almost a failure; the results are so small as not to be of any service for reference, and so are not recorded.

Rum plant (*Strobilanthes flaccidifolius*).

31. All the plants of *Strobilanthes flaccidifolius* have died, but two; these are in the ground: they appear healthy but are not vigorous, and I see no ground for believing that this plant can be successfully grown here.

C.—Distribution.

32. The demand for acclimatised vegetable seeds continues to advance, and the present year's issue is greater by several pounds in total bulk than last year, when an increase over the preceding year was recorded.

33. The details of distribution for the year are as below:—

	lbs.	ozs.
Cauliflower, early	4	0
Ditto, late	1	8
Onion	28	10
Tomato	6	8
Lettuce	3	12
Spinach	0	13
Mustard and cress	9	10
Peas and beans	84	9
Indian-corn	35	1
Cape gooseberry	3	7
Beet and turnips	2	0
Artichoke, globe	1	1
Total ...	180	15

34. The amount realized by sale of the above and 396 packets of country vegetable seeds amounted to Rs. 612-9-6, or Rs. 108-8-6 better than last year.

35. The case of imported vegetable seeds is the reverse of that of acclimatised seeds, and, as last year, again shows a further decrease in demand and the quantity issued.

The amount realized by sale of imported vegetable seeds was Rs. 1,433-12, or Rs. 258-6 less than last year.

III.—Flower Culture.

36. There is nothing of special interest to record under this head; the work of the year has been very much on the lines of preceding ones.

Flowering annuals.

37. The usual sowings of flowering annuals for seed production have been attended to, and, although the season was not a favourable one, the results in seed outturn are on the whole satisfactory.

The kinds which are raised during the rainy season were not so good as usual; the want of the normal moisture told against their doing well.

38. Attention is given to increasing the supply of such kinds as there is found to be a growing demand for on the part of the public.

Nursery of shrubs and trees.

39. The stocks of flowering shrubs and trees have been kept up, and after meeting all demands good supplies of all the leading kinds are on hand, from which future indents can also be met.

Roes nursery.

40. The rose nursery is in perhaps the least satisfactory condition; owing to unfavourable weather at the time of planting out the stocks a large number failed. On this account it has not been possible to bud such a large number of kinds and the best kinds in such number as I should have liked to have done.

Palms and other pot plants.

41. Good stocks are on hand of most of the best kinds of palms, also of other decorative plants which have to be grown and kept in pots.

Plant houses.

42. The several plant houses are all well stocked. The roof of the principal house is in need of extensive repairs, which are being attended to.